## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of allocating queues in a network device, the method comprising:

receiving a packet at an ingress port of a network device, wherein the ingress port has a plurality of virtual queues;

making a classification for the packet according to a virtual queue from said plurality of virtual queues~~, the virtual queue configured to hold a collection of information in a particular order, including information associated with the packet~~;

determining, by searching a memory of allocated physical queues, whether a previously-allocated physical queue exists for the classification;

allocating a physical queue for the classification corresponding to the virtual queue when no previously-allocated physical queue exists for the classification;

associating the physical queue with the ingress port;

storing ~~said~~ information associated with the packet in the allocated physical queue, wherein the information comprises pointer information for the packet; and

scheduling the packet for transmission between the ingress port and one of a plurality of egress ports of the network device.

2. (Canceled)

3. (Previously Presented) The method of claim 1, wherein the virtual queue is a virtual output queue.

4. (Previously Presented) The method of claim 1, further comprising:

detecting when a previously-allocated physical queue is empty; and

de-allocating the empty previously-allocated physical queue.

5. (Previously Presented) The method of claim 1, wherein the virtual queue is associated with an ingress port.

6. (Previously Presented) The method of claim 1, wherein the classification is based on one or more of a packet source, a packet destination, an ingress port number, an egress port number, or a packet priority.

7. (Previously Presented) The method of claim 1, wherein the classification further comprises a priority number.

8. (Previously Presented) The method of claim 1, wherein the determining step comprises addressing the memory of allocated physical queues in a single cycle.

9. (Previously Presented) The method of claim 4, further comprising updating a memory when a physical queue is de-allocated, wherein the memory indicates whether the classification corresponds to the previously-allocated physical queue.

10. (Previously Presented) The method of claim 4, wherein the network device further comprises a free list that indicates physical queues available for allocation and wherein the method further comprises updating the free list when the previously-allocated physical queue is de-allocated.

11. (Currently Amended) A network device, comprising:

means for receiving a packet at an ingress port of the network device, wherein the ingress port has a plurality of virtual queues;

means for making a classification for the packet according to a virtual queue from said plurality of virtual queues~~, the virtual queue configured to hold a collection of information in a particular order, including information associated with the packet~~;

means for determining, by searching a memory of allocated physical queues, whether a previously-allocated physical queue exists for the classification;

means for allocating a physical queue for the classification corresponding to the virtual queue when no previously-allocated physical queue exists for the classification;

means for associating the physical queue with the ingress port;

means for storing ~~said~~ information associated with the packet in the allocated physical queue, wherein the information comprises pointer information for the packet; and

means for scheduling the packet for transmission between the ingress port and one of a plurality of egress ports of the network device.

12. (Previously Presented) The network device of claim 11, wherein the virtual queue is associated with an ingress port of the network device.

13. (Previously Presented) The network device of claim 11, wherein the virtual queue is a virtual output queue.

14. (Previously Presented) The network device of claim 11, further comprising:
means for detecting when the physical queue is empty; and
means for de-allocating the empty physical queue.

15. (Canceled)

16. (Previously Presented) The network device of claim 11, wherein the classification is based on one or more of a packet source, a packet destination, an ingress port number, an egress port number, or a packet priority.

17. (Previously presented) The network device of claim 11, wherein the classification comprises a priority number.

18. (Previously presented) The network device of claim 11, wherein the determining means comprises means for addressing the memory.

19. (Previously Presented) The network device of claim 14, further comprising means for updating a memory when the physical queue is de-allocated, wherein the memory indicates whether the classification corresponds to the previously-allocated physical queue.

20. (Previously Presented) The network device of claim 14, wherein the network device further comprises a free list that indicates physical queues available for allocation.

21. (Previously Presented) The network device of claim 20, further comprising means for updating the free list when the previously-allocated physical queue is de-allocated.

22. (Currently Amended) A computer program embodied in a non-transitory computer readable storage medium, the computer program configured to control a network device to perform steps comprising:

receiving a packet at an ingress port of the network device, wherein the ingress port has a plurality of virtual queues;

making a classification for the packet according to a virtual queue from said plurality of virtual queues~~, the virtual queue configured to hold a collection of information in a particular order, including information associated with the packet~~;

determining, by searching a memory of allocated physical queues, whether a previously-allocated physical queue exists for the classification;

allocating a physical queue for the classification corresponding to the virtual queue when no previously-allocated physical queue exists for the classification;

associating the physical queue with the ingress port;

storing ~~said~~ information associated with the packet in the allocated physical queue, wherein the information comprises pointer information for the packet; and

scheduling the packet for transmission between the ingress port and one of a plurality of egress ports of the network device.

23. (Currently Amended) A network device, comprising:

a plurality of ingress ports configured to receive an incoming packet, wherein one or more of the ingress ports has a plurality of virtual queues;

a classification engine for making a classification for the incoming packet according to a virtual queue to ~~in~~ which the packet, or information relating to the packet, will be assigned~~stored~~, ~~wherein the virtual queue is configured to hold a collection of packets or information in a particular order and~~ wherein the virtual queue is one of said plurality of virtual queues associated with an ingress port that receives the incoming packet;

a content addressable memory that indicates whether a previously-allocated physical queue exists for the classification; and

a processor configured to:

allocate a physical queue for the classification corresponding to the virtual queue when no previously-allocated physical queue exists for the classification;

associate the physical queue with the ingress port;

store ~~said~~ information associated with the packet in the allocated physical queue, wherein the information comprises pointer information for the packet; and

schedule the packet for transmission between the ingress port and one of a plurality of egress ports of the network device.

24. (Previously Presented) The network device of claim 23, wherein the content addressable memory is searchable in one clock cycle.

25. (Original) The network device of claim 23, wherein the memory is a random access memory.

26 - 28. (Canceled)

29. (Previously Presented) The method of claim 1, further comprising:

determining a first number of packets that the ingress port of the network device can receive; and

allocating a second number of physical queues for the ingress port, wherein the second number is less than or equal to the first number.

30. (Previously presented) The method of claim 29, wherein the network device operates according to a Fibre Channel protocol and wherein the determining step is based on a number of buffer-to-buffer credits granted by the ingress port.

31. (Previously Presented) The method of claim 29, further comprising:

identifying a category for each packet arriving at the ingress port;

correlating the category to an existing physical queue; and

storing packet information in the existing physical queue.

32. (Original) The method of claim 29, further comprising:

identifying a category for each packet arriving at the ingress port; and

assigning the category to a physical queue, wherein the network device allocates a new physical queue only when there is no existing physical queue for the category.

33. (Previously presented) The network device of claim 31, wherein the packet information comprises control information selected from a list consisting of destination information, source information, priority information, payload type information and payload size information.

34 - 37. (Canceled)